REMARKS

Claims 48-62, 65, 68, 70, 71, 74, 77, 81-86, 89, 90, 92-96 and 99 are cancelled without prejudice. New Claims 100-108 have been added. Claims 63, 64, 66, 67, 69, 72, 73, 75, 76, 78-80, 87, 88, 91, 97, 98 and 100-108 are now pending in the application, with Claims 63, 72, 79, 87, 91 and 97 in independent form. The examiner has objected to Fig. 6. The Examiner has objected to Claims 48-99 for reciting "capable of..." in the preamble. The Examiner has objected to Claim 48 and Claim 70 (each now cancelled) based on informalities. The Examiner has rejected Claims 51, 58, 70, 71, 84, 89 and 90 (each now cancelled) under 35 U.S.C. §112, first and second paragraphs. The Examiner has rejected Claims 48, 49, 52-54, 58-62, 65, 70, 71, 74, 81-86, 89, 90, 93-96 and 99 (each now cancelled) and Claims 63, 66, 72, 75, 79, 80, 87, 88, 91 and 98 (each now pending) under 35 U.S.C. §103(a) as being unpatentable over Applicants' Admitted prior art (Admitted prior art) in view of Meidan et al. (U.S. Patent 5,936,972). The Examiner has rejected Claims 50, 51, 54-57, 68, 77 and 92 (each now cancelled) and Claims 64, 67, 69, 72, 73, 76, 78 and 97 (each now pending) under 35 U.S.C. §103(a) as being unpatentable over Applicants' Admitted prior art in view of Meidan et al. in further view of Erroz et al. (U.S. Patent 6,370,669).

Enclosed herewith is an Supplemental Information Disclosure Statement containing English language translations of the Abstracts of the third and forth references, JP 7-254862 and JP 9-298526, respectively, listed on Informational Disclosure Statement dated October 19, 2001 (paper# 3). Consideration of the references is respectfully requested.

Regarding the objection to Fig. 6 under 37 C.F.R. §1.83(a), the specification at the second and third paragraphs on pages 22-23 has been amended to have the terms set forth in the figure consistent with the specification. Withdrawal of the objection respectfully requested.

Regarding the claim objections based on the recitation of "capable of...", the claims as amended no longer recite "capable of..." Withdrawal of the objections respectfully requested.

Regarding the claim recitations of " a QoS parameters", the objected to claims have been cancelled. Withdrawal of the objections is respectfully requested.

Regarding the objection to Claim 79, the claim had been amended to correct the article mismatch. Withdrawal of the objections respectfully requested.

The Examiner has rejected Claims 51, 58, 70, 71, 84, 85, 89 and 90 under 35 U.S.C. §112, first and second paragraphs. These claims have been cancelled. Withdrawal of the rejections is respectfully requested.

Regarding the QoS parameter, it is respectfully submitted that clear definitions for the QoS (Quality of Service) can be found throughout the Specification, for example, on page 5 lines 18 to 24, page 9 lines 6 to 9, and page 11 lines 3 to 6. In addition, referring to page 12 lines 5 to 9, a detailed description is given that illustrates how the "permissible delay" is considered in segmenting or concatenating an input frame. Also see the Specification at page 7 line 5 to page 8 line 4. Also given in detail in these sections is the relation between the "permissible delay" and QoS. It is respectfully requested that the Examiner read the term "QoS" contained in the claims in light of at least the sections outlined above.

Regarding the rejections of independent Claims 63, 72, 79, 87, 91 and 97, Applicants respectfully submit the following distinctions between the claims of the present application and the cited reference Meidan et al. Firstly, the claims of the present application relate to a channel coding scheme using a turbo coder. However Median et al. relates to a mobile communication system using a convolutional coder. Secondly, the applicable data rate range considered in Median et al. is limited to specific data rates, however the present invention provides a mobile communication system where data rate range inputted to a turbo coder is broad, made possible in part by the segmentation of the data frames.

Thirdly, the performance of the turbo coder is greater if the input data size (input data rate) is made greater in consideration of turbo coder characteristics. However Median et al., using a convolutional coder, does not disclose that the input data size (input data rate) should be limited within a specific range in consideration of a permissible delay, memory size of decoder, etc., as recited in the claims of the present application.

Fourthly, the Examiner states that it is well known to a person having an ordinary skill in the art to segment or concatenate a data frame prior to transmission and recover the data frame after reception. However, Median et al. does not suggest the above-mentioned frame segmentation or concatenation of an input data frame ***in consideration of*** the size of the input frame (data rate), the QoS, etc., as recited in the claims. Moreover, Median et al. does not

provide a basis for suggesting or inferring a method and apparatus for receiving message information relating to the segmenting or concatenating of the input data frame and decoding the same.

Fifthly, the Examiner has repeatedly stated that Median et al. discloses that the transmitted message structure can be varied in length, type of interleaving, source data rate, convolutional code used, and any combination of the above. In this regard, it is important to note that a super frame or sub frame of the present application defines a message structure before inputting into a turbo encoder. The message structure is varied on a specific basis at the digital signal-processing step. It is recited in the claims that turbo-coded data is reconstructed and interleaved as the message structure of a unit equal to the original input frame prior to segmentation or concatenation. However, the message structure of Median et al. is a transmitted message structure.

Sixthly, the "type of interleaving" of Median et al. is a type of channel interleaver that does not relate to a turbo coder nor the internal interleaving of the turbo coder. More particularly, channel interleaving of Median et al. is performed after a channel coding (convolutional coding or turbo coding). The claims of the present application recite that the input data frame is segmented or concatenated before channel coding. Also, the claims of the present application relate to a turbo coder, and do not consider a convolutional coder.

Finally, Median et al. fails to disclose how the source data rate is applied in determining a transmitted message structure. And, it is also respectfully submitted that the source data rate of Median et al. is not identical with the data rate of the present invention, which is directly considered in determining a message structure before inputting the data into the turbo encoder.

The Examiner also cites Erroz et al. as disclosing elements of the claims of the present application. However the channel interleaver 212 of Erroz et al. fails to disclose the above-mentioned features of channel interleaver as recited in the claims of the present application. Also, Erroz et al. fails to disclose a multiplexer where the output bits encoded in a data unit of a sub frame or super frame are multiplexed and outputted. The block 214 of Erroz et al. is a modulator that does not relate to the present invention.

Referring to column 1 line 25 et seq. of Erroz et al., it is disclosed that the latency or

permissible delay condition is considered in determining the generation of the polynomial and puncturing pattern of the turbo constituent encoder, i.e., selecting an optimal turbo code. Thus, the wording "including means for latency or permissible delay" as used in Erroz et al. incorrectly states what is occurring in the Erroz et al. device. In addition, the wording "block size or memory size adjustment" (column 2 line 10, et seq.) merely states a required condition of the turbo coder. Erroz et al. does not teach or disclose the feature recited in the claims of the present application that relate to determination of block size inputted into the turbo coder.

Finally, the BER (bit error rate) mentioned in column 3 line 50, et seq., of Median et al. is a value related to the received signal, which is clearly distinguished from the permissible error rate of the present invention required as per the provided service.

In view of at least the foregoing arguments, and as neither the Admitted Prior Art, Median et al. nor Erroz et al. teaches or discloses, either alone or in combination, the elements contained in the claims of the present application, withdrawal of the rejections of the claims is respectfully requested.

Independent Claims 63, 72, 79, 87, 91 and 97 are believed to be in condition for allowance. Without conceding the patentability per se of dependent Claims 64, 66, 67, 69, 73, 75, 76, 78, 80, 88, 98 and 100-108, these are likewise believed to be allowable by virtue of their dependence on their respective amended independent claims.

Accordingly, all of the claims pending in the Application, namely, Claims 63, 64, 66, 67, 69, 72, 73, 75, 76, 78-80, 87, 88, 91, 97, 98 and 100-108, are believed to be in condition for allowance. Should the Examiner believe that a telephone conference or personal interview would facilitate resolution of any remaining matters, the Examiner may contact Applicants' attorney at the number given below.

Respectfully submitted,

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